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NMR STUDY OF THE STRUCTURE OF AQUEOUS GELATINE GELS AND THE PROCESS OF THEIR FORMATION*

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From the data on the translational mobility of macromolecules the authors have studied the processes of gelation and the structure of the gels in a gelatine–water system. Gelatine gels were found to contain freely moving macromolecules (sol fraction) and some macromolecules, portions of which, experience restrictions in movement (macromolecules forming the gel network). The size of the restrictions depends on the concentration of the solution and the time of holding at the given temperature. The dependences of the fraction of macromolecules forming the gel network on the gelation time have been obtained. An anomaly of the dependence of the self-diffusion coefficient of macromolecules on temperature during gelation was found.

THE TRANSLATIONAL mobility of macromolecules and the molecules of the solvent has been studied in some detail [1]. Similar investigations in gel-forming systems are reported only in solitary papers [2, 3] although obviously they are not only of scientific but also practical interest.

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